Injury Extra 42 (2011) 29–32

Contents lists available at ScienceDirect

Injury Extra

journal homepage: www.elsevier.com/locate/inext

Case report

A rare case of dupatta injury resulting in ipsilateral hip and knee dislocation

Sunil Gurpur Kini *, R.T. Issac

Department of Orthopaedics, Guru Teg Bahadur Hospital, University College of Medical Sciences, Dilshad Garden, Delhi 110095, India

ARTICLE INFO

Article history:
Accepted 10 December 2010

1. Introduction

Simultaneous occurrence of ipsilateral hip and knee dislocations is a rare but morbid injury. These are complex injuries associated with acetabular wall fractures, femoral head fractures, avascular necrosis of femoral head, knee instability and knee stiffness. Early recognition and emergent reduction are the norms to prevent long term sequelae. We report a case who presented to us with an ipsilateral posterior hip and open posterior knee dislocation with concomitant systemic injuries sustained by a unique mode of machinery injury.

2. Materials and methods

A 50 year old female presented to the emergency with multiple injuries. The injuries were sustained when the patient's dupatta (scarf) got entangled in the conveyer belt of a diesel machine, used in the rural areas to pump water out of the well. As a result she was dragged into the generator with resultant trauma. A wide abrasion mark was visible over the anterior aspect of the neck due to the high friction caused by the dupatta (Fig. 1). Patient had flail chest for which chest tube was inserted. Left limb was noted to be in flexion, adduction and internal rotation at the hip with an associated open dislocation of the ipsilateral knee (Fig. 2). Neurovascular examination revealed a common peroneal nerve palsy with intact vascular status of the limb. Knee dislocation was relocated but unstable. Attempt at closed reduction of the hip was unsuccessful. Radiographs revealed a posterior dislocation of the left hip (Fig. 3), posterior dislocation of left knee (Fig. 4), fracture of 1–9 ribs on the left side (Fig. 5) and fracture of shaft of humerus on the left side. Computerised Tomography (CT) scan of the abdomen and head was unremarkable. CT of the hip showed isolated posterior dislocation of the hip (Figs. 6 and 7). Emergency manipulation of the dislocations was attempted in supine position under general anaesthesia. Reduction of the knee was attempted first that would give us leverage for subsequent closed reduction of the hip. Debridement of the knee joint was initially done. Both the cruciates and collaterals were torn. The distal pulses disappeared in complete extension and returned in 10 or more degree of flexion. A knee spanning fixator was applied in 15° flexion. Closed reduction of the hip was attempted but unsuccessful. Open reduction of the hip was carried out via posterior approach. The head had buttonholed through the capsule and the short external rotators (Fig. 8). The sciatic nerve was located between the posterior rim of the acetabular wall and the head. The acetabulum and the femoral head were normal. The hip was reduced, found to be stable and the limb was immobilized in an abduction splint. Patient needed ventilation and inotropic support postoperatively but succumbed to her injuries three days later.

3. Discussion

Concomitant ipsilateral traumatic dislocation of both hip and knee following high-energy trauma is extremely rare. Most dislocations of this kind also have associated fractures (either the femoral or acetabular side or fractures around knee). The mode of trauma as in our case and the findings of isolated (pure) dislocations of the hip and the knee are unreported in literature.

In this type of injury when the knee and hip are flexed along with adduction at hip, any trauma from front as in dashboard injuries or head on collisions can result in simultaneous

Fig. 1. Graze marks caused by the dupatta over the front of the neck.

* Corresponding author at: 26, Canara Bank Apartments, South Patel Nagar, New Delhi 110008, India. Tel.: +91 9717354530; fax: +91 9924655571.
E-mail address: drsunilkini@gmail.com (S.G. Kini).

doi:10.1016/j.injury.2010.12.007

Fig. 2. Clinical photograph showing open knee dislocation.

dislocations at these two sites. Posterior hip dislocation is more common than anterior dislocations and account for approximately 90% of hip dislocations.[2] The patient had common peroneal nerve injury, and such association is also reported in literature.[4] CT is invaluable in revealing associated acetabular wall fractures, for detecting reduction, intra-articular osteochondral fragments, and residual subluxation of the joint.[1] There is always a substantial risk of developing late complications such as posttraumatic arthritis and osteonecrosis of femoral head.[3]

Complete open dislocations of the knee are associated with extensive soft-tissue and ligamentous rupture and vascular or nerve injuries. Damage to the popliteal artery is common because of the stretching mechanism secondary to tethering of the vessel at the adductor hiatus or by direct contusion by the posterior tibial plateau; so are fractures of the distal femur or the tibial plateau.

Fig. 3. Radiograph showing the posterior dislocation of the left hip.

Fig. 4. Radiograph showing posterior dislocation of the left knee.

Emergent reduction of both these dislocations has to be carried out. Incidence of avascular necrosis of hip is 4.8% if reduced within 6 h and it increases to 58.8% if reduced later than that. It takes about 17 months for avascular necrosis to become clinically apparent.[5] An unreduced knee dislocation can give rise to persistent pressure on the neurovascular structures in the

Fig. 5. Chest radiograph showing multiple rib fractures on the left.

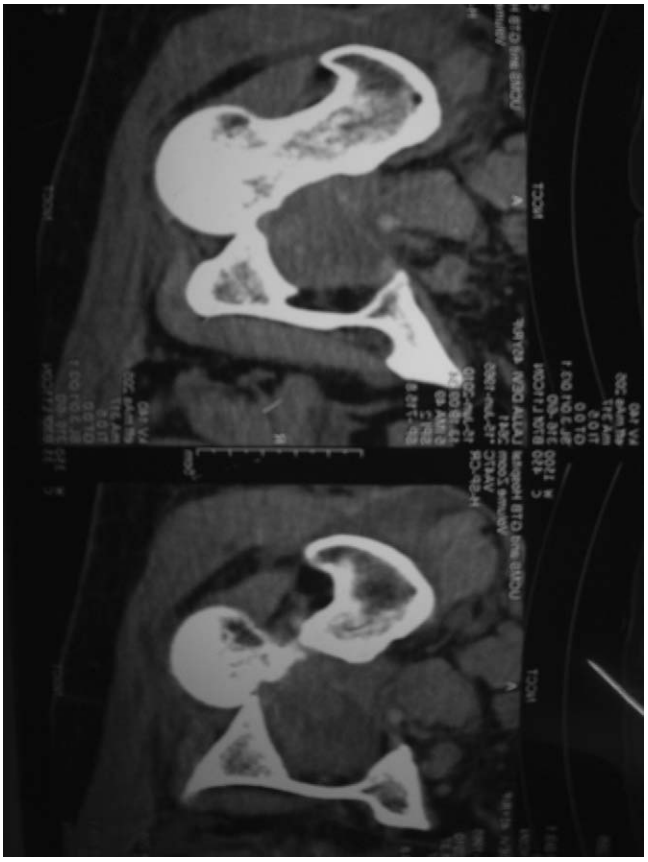

Fig. 6. CT scan axial images showing posterior dislocation of the hip.

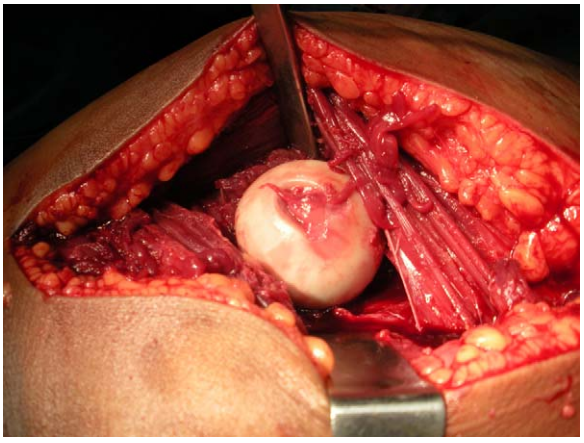

Fig. 8. Intraoperative photograph showing the dislocated head buttonholed through the short external rotators.

popliteal fossa can cause Volkman ischaemia in the leg and irreversible neuronal damage.

4. Conclusion

Ipsilateral posterior hip and knee dislocations are uncommon. Emergent reductions are imperative to prevent short term catastrophes of compartment syndrome and neurovascular impairment and long term sequelae such as avascular necrosis and degenerative arthritis.

Dupatta injuries are common injuries in this part of the subcontinent. The spectrum of injuries range from soft tissue injuries to multiple bony injuries. It is important to highlight that these injuries are avoidable. Safety measures, such as the use of pins, plastic or guards and alterations in dress should be reinforced to prevent loose, flowing ends.

Fig. 7. CT scan 3D reconstruction images including head subtraction view to show intact acetabulum.

References

1. Brooks RA, Ribbans WJ. Diagnosis and imaging studies of traumatic hip dislocations in the adult. Clin Orthop Relat Res 2000;377: 15–23.
2. Dawson I, van Rijn AB. Traumatic anterior dislocation of the hip. Arch Orthop Trauma Surg 1989;108:55–7.
3. Dreinhofer KE, Schwarzkopf SR, Haas NP. Isolated traumatic dislocation of the hip. Long-term results in 50 patients. J Bone Joint Surg Br 1994;76:6–12.
4. Kreibich DN, Moran CG, Pinder IM. Ipsilateral hip and knee dislocation. A case report. Acta Orthop Scand 1990;61(February (1)):90–1.
5. Kundu ZS, Mittal R, Sangwan SS. Simultaneous asymmetric bilateral hip dislocation with unilateral fracture of femur-peculiar mode of trauma in a case. Eur J Orthop Surg Traumatol 2003;13:255–7.